

USSR

KARPOVICH, I. A., et al., Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 381-385

volts agrees well with the activation energy of Na ions in thermally grown SiO_2 films.

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USSR

UDC 669.721:669.794:539.434

TIKHOVA, N. M., SOLOV'YEVA, G. G., BLOKHINA, V. A., ANTIPOVA, A. P., VASIL'YEVA, T. P.

"Problem of the Theory of Alloying Magnesium with Rare Earth Metals and Yttrium"

V sb. Redkozemel'n. met i splavy (Rare Earth Metals and Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 99-103 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 4I656)

Translation: A study was made of the causes of the positive effect of rare earth metals and yttrium on the high-temperature strength of Mg in comparison with alloys of the Mg-Al system. A photograph of the microstructures of the alloys as a function of composition and heat treatment conditions is included, and tables are given for mechanical properties, known alloys, and a new experimental alloy with yttrium. 2 illustrations and 2 tables.

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UDC 621.785.784:669.721

USSR

TIKHOVA, N. M., BLOKHINA, V. A., ANTIPOVA, A. P., VASIL'YEVA, T. P., SOLOV'YEVA, G. G., All-Union Scientific Research Institute of Aviation Materials

"Effect of Prolonged Heating on Properties of the ML9 and ML10 Magnesium Alloys"

Moscow, Metallovedeniye, No 10, 1971, pp 73-76

Abstract: A study was made of the effect of prolonged heating, 0.5-30,000 hours, at 125-300°C, on the microstructure and mechanical properties of ML9 and ML10 heat-resistant cast magnesium alloys, developed on the base of the system Mg-Nd-Zr for continuous working at up to 250 and 300°C, respectively. The chemical compositions of the ML9 and ML10 alloys, their industrial heat treatment, and their mechanical properties in comparison with the widely used ML5 alloy are shown. The change of mechanical properties at temperatures up to 300°C is discussed. The structure and mechanical properties of the ML10 alloy, after heating at 200°C over periods of 1000 and 2500 hours are the same.

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TIKHOVA, N. M., et al, Metallovedeniye, No 10, 1971, pp 73-76

At higher temperatures (250°C), an intensive decomposition of grains of the solid solution occurs. A microstructural change of the ML9 alloy after heating over a period of 1000 hours at 200°C and 10 hours at 250°C was not observed. Heating at 300°C changed its microstructure substantially. 3 illustrations, 6 tables, 1 bibliographic reference

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UDC: 681.325.5

USSR

KONDRAT'YEV, A. P., ASTSATUROV, R. M., MAL'TSEV, N. A., TIKHOVICH, Yu. V.

"Tabular Adder-Multiplier"

USSR Authors' Certificate No 253442, Filed 11 January 1968, Published 25 February 1970 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, 1970, Abstract No 10B224P, by V. M.)

Translation: The tabular adder-multiplier (TAM) suggested, consisting of a memory unit, tabular address forming circuit, registers (R), first (1) and second (2) operands (O), and control device is simplified and the time required to perform operations is reduced by the use of result output and analysis units. The inputs of the analysis units are connected to the outputs of the R of the first and second O, while the outputs are connected through AND circuits to the inputs of the first and second OR circuits of the result output unit. The output of the first OR circuit of the result output unit is connected to the input of the interrogation circuit of the R of the second O, the output of which is connected to the flip-flops of the R of the second O. The output of the second OR circuit in the result output unit is connected to the input of the interrogation circuit of the R of the first O, the input of which is connected to the flip-flops of the R of the first O. One illustration.

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USSR

UDC 595.775

NAZAROVA, I. V., and TIKHVINSKAYA, M. V., Biological Institute, Kazan' University, and Kazan' State Pedagogical Institute

"Fleas of the Water Vole (*Arvicola terrestris*) in the Middle Volga Region"

Leningrad, Parazitologiya, No 5, 1971, pp 413-416

Abstract: Thirteen species were identified among 698 fleas collected from 1,039 water voles caught in the Middle Volga region from 1957 to 1967. *Ceratophyllus walkeri* and *Ctenophthalmus wagneri* constituted 56 and 10% of all the fleas. *Leptopsylla bidentata*, *Ctenophthalmus agyrtes*, and *Amphipsylla rossica* were less common. Only rare specimens of the other eight species were found. The species variety was greatest (all 13) in floodplains of large rivers (Kama, Vyatka, etc.). These floodplains are natural foci of tularemia and the destination of seasonal migrations of the voles, which exchange parasites with other small mammals in these regions. Water voles are highly sensitive to tularemia and their fleas can harbor and spread the disease. It is suggested that in years when the voles are particularly numerous, their burrows should be poisoned in order to destroy both the rodents and their ectoparasites.

1/1

005
TITLE--CONDENSATION RESIN -U- UNCLASSIFIED PROCESSING DATE--02OCT70
AUTHOR--(05)--NOVOSELTSEV, P.V., BRYZGALOVA, M.A., ZASOVA, V.A.,
TIKHVINSKAYA, M.YU., RIZHANDVSKAYA, G.A.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 260,682
REFERENCE--OTKRYTIYA, IZJURET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--06JAN70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--CONDENSATION TYPE RESIN, CHEMICAL PATENT, PHENOL,
FORMALDEHYDE, PHENYL ETHER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/0242
CIRC ACCESSION NO--AA0111436
STEP NO--UR/0482/70/000/000/0000/0000
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AA0111436
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CONDENSATION RESIN WAS PREPD. BY
TREATING PH SUB2 O WITH HCHO FOLLOWED BY CONDENSATION POLYMN. WITH PROH.

UNCLASSIFIED

89

Acc. Nr:

AP0034215

Abstracting Service:
CHEMICAL ABST. 4-70

Ref. Code:

UR 0078

71259p Complexing palladium(II) with α -benzil dioxime in halide and thiocyanate media. Tikhvinskaya, T. I.; Birjukov, A. A.; Shlenskaya, V. I.; Gordvinskaya, N. K. Dokl. Akad. Nauk SSSR, Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR. Zh. Neorg. Khim. 1970, 15(1), 128-33 (Russ). By using competitive ligands, like Cl^- , Br^- , or SCN^- ions, stability constant ($\log \kappa_2$) of $\text{Pd(II)}-\alpha$ -benzil dioxime (HL) complex, PdL_2 , was detd. and is given as $\log \kappa_2 = 34.6 \pm 0.5$. At 20° and ionic strength ≈ 1.0 , distribution const. (λ) of PdL_2 in $\text{H}_2\text{O}-\text{C}_6\text{H}_6$ system, presented as $\log \lambda$, is 2.3 ± 0.2 . Equil. consts. (as $\log K$) of $\text{Pd}^{2+} + 2\text{HL} \rightleftharpoons \text{PdL}_2(\text{aq.}) + 2\text{H}^+$ and $\text{PdL}_2(\text{aq.}) + \text{OH}^- \rightleftharpoons \text{PdL}_2\text{OH}^-$ are 13.9 ± 0.2 and 4.8 ± 0.2 , resp. HMJR

REEL/FRAME

19710868

USSR

UDC 541.49.546.65+546.4/.5

TIKONOVA, L. I.

"Complex Formation of Some Alkaline Earth and Rare Earth Elements with Ethylenediamine-N,N,N',N'-Tetramethylphosphonic Acid"

Leningrad, Radiokhimiya 12, No 3, 1970, pp 519-521

Abstract: Complex formation of Sr^{+2} , Ca^{+2} , Y^{+3} , and Ce^{+3} was studied by chromatography and potentiometry. The dissociation and instability constants of chelates of the type $\text{MeH}_2\text{X}^{-4}$, MeHX^{-5} , MeX^{-6} , and Me_2X^{-4} (Sr^{+2} , Ca^{+2}), and MeX^{-5} (Y^{+3} , Ce^{+3}) were determined. It was found that the chelates MeX^{n-8} with Sr^{+2} and Ca^{+2} are considerably less stable and that those with Y^{+3} and Ce^{+3} are somewhat less stable than the corresponding complexes with ethylenediamine-N,N,N',N'-tetraacetic acid.

1/1

UNCLASSIFIED
TITLE--THERMAL CONFORMATIONAL TRANSFORMATION OF TROPICOLLAGEN. I.
CALORIMETRIC STUDY -U-
AUTHOR--(02)-PRIVALOV, P.L., TIKTOPULO, E.I.
PROCESSING DATE--23OCT70
COUNTRY OF INFO--USSR
SOURCE--BIOPOLYMERS 1970, 9(2), 127-39
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--COLLAGEN, THERMAL STABILITY, ENTHALPY, ENTROPY, CALORIMETRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/0013
CIRC ACCESSION NO--AP0105113
STEP NO--US/0000/70/009/002/0127/0139
UNCLASSIFIED

2/2 025

CIRC ACCESSION NO--AP0105113

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECTS OF HEAT IN HEATED SOLNS. OF TROPOCOLLAGENS OF DIFFERENT ORIGINS WERE CALORIMETRICALLY STUDIED. DENATURATION ENTHALPY AND ENTROPY OF DIFFERENT TROPOCOLLAGENS INCREASE WITH INCREASING IMINO ACID CONTENT AND THERMOSTABILITY. THE VALUE AND DEPENDENCE OF DENATURATION ENTHALPY AND ENTROPY ON THE DENATURATION TEMP. FOR TROPOCOLLAGENS WITH DIFFERENT IMINO ACID CONTENTS ARE INCONSISTENT WITH THE ASSUMPTION THAT THE NATIVE STRUCTURE OF TROPOCOLLAGEN IS STABILIZED ONLY BY INTRAMOL. H BONDS. A SUPPOSITION IS MADE THAT THE REGULAR WATER STRUCTURE NEAR THE MACROMOL. PLAYS AN ESSENTIAL ROLE IN STABILIZING THE STRUCTURE. FROM THE CHARACTER OF TROPOCOLLAGEN MELTING CURVES IN SALT FREE SOLN. IT IS FOUND THAT THE TROPOCOLLAGEN MACROMOL. IS LINEARLY HETEROGENEOUS. THE COMPLEX PATTERN OF THERMAL ABSORPTION OBSD. IN TROPOCOLLAGEN SALT SOLN. IS CONNECTED WITH PREDENATURATIONAL CONFORMATIONAL TRANSFORMATION WHEN APPROACHING CONDITIONS CLOSE TO THE PHYSIOL. FACILITY: INST. PROTEIN RES., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.385.64

VERYASKIN, V.S., KISHINEVSKIY, L.I., TIKTIN, S.A.

"Continuous-Action Magnetron With Evaporative Cooling For Microwave Heating Units"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 7, pp 114-119 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A123)

Translation: The results are presented of the development of a continuous-action centimeter-band magnetron of average power for domestic and industrial microwave heating units. A distinctive characteristic of the magnetron developed is the evaporative cooling of the anode unit [blok], which has a number of advantages in comparison with other methods of cooling. As a boiling-water heat-transfer agent, it is possible to use both industrial water and water solutions of ethyleneglycol with a freezing point to minus 70° C.

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USSR

UDC 576.851(Providencia)+616.935-039-0

AVDEYEVA, T. A., SMIRNOVA, L. A., TIKTINA, Ye. G., and
KAPKOVA, A. G., Leningrad Institute of Epidemiology and Micro-
biology imeni Pasteur, Leningrad City Sanitary Epidemiological
Station, and Leningrad Neva District Sanitary Epidemiological
Station, Leningrad

"Biological Characteristics of Providencia Bacteria in Connection
with Their Possible Etiological Role in Group Outbreaks of
Dysentery-Like Diseases"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
Vol 48, No 2, Feb 71, pp 120-123

Abstract: Strains of Providencia (Enterobacteriaceae) isolated
in the summer of 1968 from children 7-14 years old in connection
with a study of dysentery-like diseases with a single alimentary
source of infection were subjected to serological typing. A
study of 88 isolated strains of Providencia indicated that these
strains had common cultural and enzymatic characteristics, but
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AVDEYEVA, T. A., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 48, No 2, Feb 71, pp 120-123

could be subdivided into six serological types on the basis of reactions with rabbit OH-immune sera. Five of the six serological types, comprising the majority of the strains, were closely related with respect to O- or H-antigens. Within each of the six O-groups, independently of the number of strains in the group, the strains had an identical H-antigen, i.e., they belonged to the same serotype. These serological characteristics differed considerably from those established for Providencia cultures of diverse origin.

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SECTION IV

Sci: Selected Research Institute
Facilities

PC-89
JUN 1971

(14)

Name: Protein Research Institute, Pushchino
Description:

(U) During this quarterly reporting period, two new articles were located from the Protein Research Institute at Pushchino. On the basis of one of the articles, which dealt with escherichia coli ribosomes, it was possible to associate one new person, N. I. Smirnov, with the Institute (32). The other article, also on escherichia coli, was issued jointly from the Institute of Genetics and Selection of Microorganisms, Moscow, and the Protein Research Institute at Pushchino (33). Previous articles by V. I. Frenkel' have been issued from the former Institute. No previous facility association could be located for V. D. Vasil'yev, but it is likely that he represents the latter Institute. This article probably represents some joint work between the two Institutes.

(U) As a ready source of reference, given below is a complete listing of personalities identified with the Protein Research Institute to the present time:

Ref - 200444

<u>Baletina, N. V.</u>	<u>Privator, P. I.</u>
<u>Berehteyn, T. M.</u>	<u>Pileyn, O. B.</u>
<u>Chirgachev, Yu. M.</u>	<u>Rashenskaya, Ye. P.</u>
<u>Fedorov, B. A.</u>	<u>Serduk, I. N.</u>
<u>Finkel'shteyn, A. V.</u>	<u>Smirnov, N. I.</u>
<u>Ginskaya, O. V.</u>	<u>Spirin, A. S.</u>
<u>Lavrilova, L. P.</u>	<u>Tikhomirov, Ye. I.</u>
<u>Martin, Yu. V.</u>	<u>Vasil'yev, V. D.</u>

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1 INNI ASSCIEN

USSR

UDC 66.063.672:543.825.3

TIKUNOVA, I. V., SHER, V. V., and SANIN, P. I., All Union Scientific Research and Development Institute of Synthetic Lubricants, Shchebekino; Institute of Petrochemical Synthesis imeni A. V. Topchiyev Acad. Sc. USSR

Moscow, Neftekhimiya, Vol 13, No 1, Jan-Feb 73, pp 141-144

Abstract: Absorption of zinc dialkyl dithiophosphates on oxidized carbon black particles was studied. It was established that oxidized carbon black particles adsorb 2-3 times as much zinc dialkyl dithiophosphates as crude carbon black. Adsorption of zinc dialkyl dithiophosphates increases the stability of carbon black suspension in hydrocarbon media. The degree of the stability of carbon black heptane suspension increases with increased concentration and increased molecular weight of the zinc stabilizer. Mixtures of dialkyl dithiophosphates are more effective than individual compounds.

1/1

UNCLASSIFIED
TITLE--INDUSTRIAL ADOPTION OF THE FLUIDIZED BED ROASTING OF MERCURY
ANTIMONY FLOTATION CONCENTRATES -U-
AUTHOR--(02)-TILGA, V.A., KLEANDROV, T.N.
PROCESSING DATE--27NOV70
COUNTRY OF INFO--USSR
SOURCE--TSVET. METAL 1970, 43(3), 18-22
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS
TOPIC TAGS--FLUIDIZED BED, MERCURY, ANTIMONY, FLOTATION, ROASTING FURNACE,
ORE BENEFICIATION, SULFUR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/1414
CIRC ACCESSION NO--AP0126952
STEP NO--UR/0136/70/043/003/0018/0022
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126952

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN IMPROVED FLUIDIZED BED FURNACE AND AUXILIARY APP. ARE DESCRIBED FOR THE ROASTING OF SULFIDE CONCS. CONTG. HG 0.6-0.9 AND SB 27-9PERCENT. ROASTING WAS AUTOGENOUS AND REQUIRED LITTLE FUEL. TO PREVENT SINTERING OF THE CHARGE AND VOLATILIZATION OF SB WITH HG, THE TEMP. UNDER THE FURNACE ROOF WAS HELD AT 480-500DEGREES. THE FURNACE COULD BE MECHANIZED AND CONTROLLED AUTOMATICALLY. THE EXTN. WAS SIMILAR TO 91PERCENT HG AS A LIQ. AND SB SOMEWHAT HIGHER IN A CALCINE CONTG. 29-31PERCENT SB. INCOMPLETE S ELIMINATION GAVE BETTER RESULTS THAN DEAD ROASTING.

UNCLASSIFIED

USSR

UDC 615.21:547.831.3

MOSKOVKINA, T. V., TILICHENKO, M. N., KURILENKO, V. M., and FEDYAYEVA-RASOVA,
L. P., Far Eastern University, Vladivostok, and the Novokuznetsk Scientific
Research Chemicopharmaceutical Institute

"In Search of Medicinal Agents in the Hydroquinoline Series"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 3, 1973, pp 3-6

Abstract: For purposes of obtaining new neutropic agents, a number of tetra- and decahydroquinolines were synthesized by reacting 1,5-diketones (prepared by adding cyclohexanone or α' , α' -dimethyltetrahydro- γ -pyrone to chalcone) with formamide in formic acid (Leuckart reaction). The resultant hydroquinolines were colorless, crystalline substances that formed water-soluble salts with mineral acids. Only one preparation, 1-amino-2,4-diphenyldecahydroquinoline, showed antidepressive properties by preventing reserpine-induced blepharoptosis and hypothermia, and chlorpromazine catalepsy.

UNCLASSIFIED
TITLE--CONDENSATION OF ALDEHYDES AND KETONES. XX. PREPARATION OF
METHYLENEBIS, CYCLOHEXANONE, BY THE ALKALINE CONDENSATION OF
AUTHOR--(02)-TILICHENKO, M.N., AKIMOVA, T.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 976-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CYCLOHEXANONE, CONDENSATION REACTION, FORMALDEHYDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1346
CIRC ACCESSION NO--AP0135020
STEP NO--UR/0366/70/006/005/0976/0979
UNCLASSIFIED

006
CIRC ACCESSION NO--AP0135020 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING THE PREPN. OF
2,2PRIME,METHYLENEBIS(CYCLOHEXANONE) BY THE ALK. CONDENSATION OF HCHO
WITH CYCLOHEXANONE, 2,(1,HYDROXYCYCLOHEXYL) CYCLOHEXANONE AND 2,(DELTA
PRIME1,CYCLOHEXENYL)CYCLOHEXANONE (CONTG. CYCLOHEXYLIDENE TAUTOMER) ARE
ALSO FORMED.
USSR. FACILITY: DAL'NEVOST. GOS. UNIV., VLADIVOSTOK,
PROCESSING DATE--13NOV70

UNCLASSIFIED

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203310012-7

UNCLASSIFIED
TITLE--SYNTHESIS AND SOME PROPERTIES OF ALPHA, AND BETA, FORMS OF 10,
AMINOPERHYDROACRIDINE -U-
AUTHOR-(02)-MOSKOVKINA, T.V., TILICHENKO, M.N.
PROCESSING DATE--23OCT70
COUNTRY OF INFO--USSR
SOURCE--KHIM. FARM. ZH. 1970,4(3), 28-32
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--NERVOUS SYSTEM DRUG, AMINE DERIVATIVE, CHEMICAL SYNTHESIS,
ENZYME ACTIVITY, INHIBITION, SEROTONIN, BRAIN, LIVER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0400
CIRC ACCESSION NO--AP0121080
STEP NO--UR/0450/70/004/003/0028/0032
UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203310012-7"

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/3 026

CIRC ACCESSION NO--AP0121080

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORM SHOWN ON MICROFICHE.
PERHYDROACRIDINE (I) TREATED WITH DIL. HCL PPTD. THE CHL SALT OF THE
ALPHA, ISOMER; THE FILTRATE SATD. WITH NA SUB2 CO SUB3 GAVE THE
BETA, FORM. II, III, AND IV WERE PREPD. FROM BOTH FORMS. A BOILING AQ.
SOLN. OF I. HCL WITH NANO SUB2 GAVE THE 10, NITROSO DERIVS. AND REDN.
YIELDED 10, AMINO DERIVS. THUS WERE PREPD. III (ISOMER, R, PERCENT
YIELD, AND M.P. GIVEN): ALPHA, H, MINUS, 89-90DEGREES (ETOH); BETA, H,
MINUS, 47-9DEGREES; ALPHA, NO, 90, 87-8DEGREES (LIGROIN); BETA, NO, 80,
65-6DEGREES (LIGROIN); ALPHA, NH SUB2, 84, 81-3DEGREES (LIGROIN); BETA,
NH SUB2, HCL, MINUS, 192-3DEGREES (DIOXANE); ALPHA, NH SUB2, 84,
58-9DEGREES (LIGROIN); BETA, NH SUB2, HCL, MINUS, 160-1DEGREES (CHCL
SUB3). REACTION OF 10, AMINO PERHYDROACRIDINE WITH ALDEHYDES OR KETONES
YIELDED III (ISOMER, R PRIME1, R PRIME2, PERCENT YIELD, AND M.P. GIVEN):
BETA, ET, H, 76, 132-3DEGREES (ME SUB2 CO); ALPHA, P, ME SUB2 NC SUB6 H
SUB4, H, 65, 187-8DEGREES (ETOH); BETA, P, ME SUB2 NC SUB6 H SUB4, H, 63,
159-60DEGREES (ETOH); BETA, P, MEDC SUB6 H SUB4, H, 83, 149-51DEGREES
(ETOH); BETA, 3,4, (METHYLENEDIOXY) PHENYL, H, 79, 157-9DEGREES (ME SUB2
CO); BETA, PHCH:CH, H, 75, 109-11DEGREES (ME SUB2 CO); ALPHA, PHCH:CH,
H, 68, 197DEGREES (ETOH); BETA, P, O SUB2 NC SUB6 H SUB4, H, 80,
147-9DEGREES (ETOH); BETA, 5, NITRO, 2FURYL, H, 30, 146-7DEGREES (C SUB6
H SUB14); ALPHA, 5, NITRO, 2, FURYL, H, 85, 70-1DEGREES (DMF); BETA, ME, ME,
90, 47-8DEGREES (DMF).

UNCLASSIFIED

ABSTRACT/EXTRACT--REDN. OF III (R PRIME1 EQUALS R PRIME2 EQUALS ME) GAVE
 80PERCENT 10, (ISOPROPYLAMINO) DERIV. M. 60-1DEGREES, OF ALPHA, I (HCL
 SALT M. 217-20DEGREES) AND 75PERCENT BETA, ISOMER, M. 30-2DEGREES; HCL
 SALT M. 210-14DEGREES (DECOMPN.). REACTION OF II (R EQUALS NH SUB2)
 WITH (CO SUB2 ET) SUB2 AND ACID CHLORIDES YIELDED IV (ISOMER, R, PERCENT
 YIELD, AND M.P. GIVEN): ALPHA, ETO SUB2 C, 23, 212DEGREES (ETOH); BETA,
 ETO SUB2 C, 39, 206-7DEGREES (AQ. ETOH); ALPHA, PH, 70, 297-8DEGREES (ME
 SUB2 CO); BETA, PH, 60, 257-8DEGREES (DMF); ALPHA, P, H SUB2 NC SUB6 H
 SUB4, 40, 285-7DEGREES; BETA, P, H SUB 2 NC SUB6 H SUB4, 40,
 248-50DEGREES (ETOH); BETA, 3, PYRIDYL, 90, 253-4DEGREES (ETOH). BOTH
 ISOMERS OF 10, AMINO DERIV. INHIBIT MONOAMINOXIDASE; ALPHA, FORM BLOCKS
 THE DECOMPN. OF SEROTONIN IN RAT BRAIN AND LIVER, BETA, FORM ONLY IN THE
 LIVER. BOTH ISOMERS SHOW NO EFFECT ON SEROTONIN OF MOUSE BRAIN.
 ALPHA, ISOMER OF 10, (ISOPROPYLAMINO) DERIV. OF LESS ACTIVE AND BETA, FORM
 COMPLETELY INACTIVE.
 USSR.
 FACILITY: DAL'NEVOST. UNIV., VLADIVOSTOK,

PROCESSING DATE--23OCT70

UNCLASSIFIED

Acc. Nr:

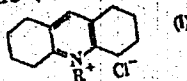
AP0053437

Abstracting Service:
CHEMICAL ABST.

Ref. Code:

UR 0366

111272w Interaction of 2,2'-methylenebicyclohexanone with primary amines in the presence of carbon tetrachloride [acridinium salts]. Kaminskii, V. A.; Saverchenko, A. N.; Tilichenko, M. N. (Dal'nevost. Gos. Univ., Vladivostok, USSR). Zh. Org. Khim. 1970, 6(2), 404-5 (Russ). The title reaction in benzene contg. 2-3 equivs. CCl₄ gave 80-5% substituted sym-octa-hydroacridinium chloride (I) (R is α -naphthyl, β -naphthyl, p-



C₆H₅OMe, PhCH₃, Ph, CHCl₃, and CH₂Cl₂). The same reaction takes place in pure CCl₄, but the yields are lower. CPJR

REEL/FRAME
19830462

Acc. Nr.

AP0042032

Abstracting Service:

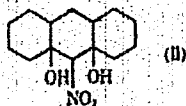
CHEMICAL ABST.

4170

Ref. Code

4R0366

89867v Synthesis and some reactions of 9-nitro-8a,9a-dihydroxyperhydroanthracene. Karaulov, B. S.; Tilichenko, M. N. (Dal'nevost. Gos. Univ., Vladivostok, USSR). *Org. Khim.* 1970, 6(1), 186-7 (Russ). The reaction of MeNO₂ with bis(2-oxocyclohexyl)methylene (I) gave 9-nitro-8a,9a-dihydroxyperhydroanthracene (II). Heating II with S gave 9-nitroanthracene (III). Refluxing II in Ac₂O gave a mixt. of 9-



nitroperhydroanthracene and 9-nitro-1,2,3,4,5,6,7,8-octahydroanthracene. Heating I with HClO₄ gave dicyclohexeno-[2,3:5,6]pyrylium perchlorate, which reacted with MeNO₂ to give III. Reacting II with SOCl₂ gave II sulfite. CPJR

REEL/FAME

19751929

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1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ABSORPTION SPECTRA AND SIZE OF COLLOIDAL CENTERS IN SODIUM AND
POTASSIUM CHLORIDE CRYSTALS -U-
AUTHOR--(05)-SHVARTS, K., EKMANIS, YU.A., UDOD, V.V., LYUSHINA, A.F.,
TILIKS, YU.YE.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(4) 879-84
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ABSORPTION SPECTRUM, SODIUM CHLORIDE, POTASSIUM CHLORIDE,
OPTIC PROPERTY, CRYSTAL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0580

STEP NO--UR/0181/70/012/003/0879/0884

CIRC ACCESSION NO--AP0105563

UNCLASSIFIED

2/2 022
CIRC ACCESSION NO--AP0105563
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. COLLOIDAL CENTERS WERE INVESTIGATED IN ELECTROLYTICALLY COLORED NaCl AND KCl CRYSTALS WITH THE APPLICATION OF OPTICAL, ELECTRON MICROSCOPIC, AND CHEM. METHODS. COMPARISON OF THE EXPTL. ABSORPTION SPECTRA OF COLLOIDAL PARTICLES WITH THOSE CALCD. BY THE MIE THEORY WITH THE ACCOUNT OF EXPTL. DISTRIBUTION OF THE PARTICLES OVER DIMENSIONS FOR NaCl AND KCl CRYSTALS GAVE A GOOD COINCIDENCE. THIS IS A DIRECT PROOF OF THE VALIDITY OF THE MIE THEORY FOR THE DESCRIPTION OF OPTICAL PROPERTIES OF COLLOIDAL PARTICLES IN IONIC CRYSTALS. THE COLLOIDAL CENTERS WITH RADIUS GREATER THAN 600 ANGSTROM ARE REPRESENTED WEAKLY IN THE OPTICAL SPECTRUM, THOUGH SUCH PARTICLES IN ELECTRON MICROSCOPIC INVESTIGATION WERE OBSD. IN ALL CRYSTALS. COLLOIDAL PARTICLES ARE QUITE UNIFORMLY DISTRIBUTED OVER THE CRYSTAL, AND MORE SO IN NaCl THAN IN KCl CRYSTALS.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EXPERIENCE IN THE USE OF PNEUMOGRAPHY IN THE DIAGNOSIS OF DISEASES
OF SUBMANDIBULAR SALIVARY GLANDS, PNEUMOSUBMANDIBULOGGRAPHY -U-
AUTHOR-(03)-MOCHULSKIY, A.S., PLINER, M.A., TILINA, U.A.

COUNTRY OF INFO--USSR

SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 66-67

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORAL DISEASE, SALIVARY GLAND, PNEUMOGRAPHY, RADIOGRAPHY,
DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0504

STEP NO--UR/0511/70/049/003/0066/0067

CIRC ACCESSION NO--AP0131127

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131127

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THROUGH A SYSTEM OF TWO BOBROV'S APPARATUS THE AUTHORS INSUFFLATED OXYGEN UNDER THE MUSCLES OF THE SUBMENTAL REGION AND UNDER CONTROL OF THE X RAY SCREEN PREPARED ROENTGENOGRAMS OF SUBMAXILLARY SALIVARY GLAND FROM BOTH SIDES. IN A NUMBER OF CASES TOMOGRAMS WERE RECORDED AND THE INVESTIGATION WAS COMBINED WITH SIALOGRAPHY. ON THE ROENTGENOGRAMS THERE ARE DISTINCTLY SEEN CONTOURS OF THE GLAND, FORM AND ITS LOBAR STRUCTURE AND INTERRELATION WITH THE SURROUNDING TISSUES.

UNCLASSIFIED

USSR

YESIPCHUK, Yu. V., et al., Zhurnal Tekhnicheskoy Fiziki, Vol 43, No 7, pp 1466-1473

transverse diffusion. In previous work transverse conductivity had been connected only with an ionization wave. It is shown that in many modes of operation without an ionization wave, in which drift oscillations are the fundamental waveform, the conductivity across the field is still several orders of magnitude higher than Coulomb conduction. It is hypothesized that the mechanism responsible for both ionization and drift instability may be oscillations with a frequency close to the electron cyclotron frequency.

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1/2 041
TITLE--AT HIGH ALTITUDES -U-

UNCLASSIFIED

PROCESSING DATE--23OCT70

AUTHOR--TILIS, A.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA GAZETA, JULY 24, 1970, P 3, COLS 1-3

DATE PUBLISHED--24JUL70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MEDICAL RESEARCH FACILITY, DOG, HYPOXIA, CIRCULATORY SYSTEM,
MEDICAL PERSONNEL, ALTITUDE ADAPTATION, HEMATOPOIESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1999/0915

STEP NO--UR/9034/70/000/000/0003/0003

CIRC ACCESSION NO--AN0122959

UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AN0122959

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTS CONDUCTED BY THE KIRGIZ MEDICAL INSTITUTE DESIGNED TO DETERMINE THE HYPOXY ADAPTATION MECHANISM ARE DESCRIBED. DOGS WERE USED AS TEST ANIMALS. THE ALTITUDES OF THE EXPERIMENTS VARIED BETWEEN 760 M, IN FRUNZE, AND 3,200 M, IN HIGHLANDS. CLINICAL STUDIES CONDUCTED BY A. RAIMZHANOV AND DIRECTED BY M. MIRRAKHIMOV, CORRESPONDING MEMBER OF THE ACADEMY OF MEDICAL SCIENCES, U.S.S.R., HAVE SHOWN THAT A SERUM ENRICHED WITH HEMOPOIETINS CAN BE USED TO STIMULATE THE BLOOD PRODUCING SYSTEM. FACILITY: CHAIR OF PATHOLOGICAL PHYSIOLOGY. FACILITY: KIRGIZ MEDICAL INSTITUTE.

UNCLASSIFIED

USSR

UDC 612.119+615.739

TILIS, A. YU., Chair of Pathological Physiology, Kirgiz State Medical Institute

"Data Obtained in the Study of Inhibitors of Hemopoiesis"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 2, Mar/Apr 71, pp 6-10

Abstract: In experiments conducted on dogs, aseptic inflammation was produced by subcutaneous injection of turpentine, or the body of the animals was overheated by placing them for 40-60 minutes into a chamber with a temperature of 45-50°. As a result of either treatment, hemopoiesis was depressed. The depression of hemopoiesis was associated with a decrease in the content of erythropoietins in the blood serum. On bloodletting, stimulation of hemopoiesis and an increase in the content of erythropoietins in the blood serum such as that observed in normal animals after a blood loss did not take place in dogs that had been subjected to overheating or in which an aseptic inflammation had been produced. At the height of anemization of experimental animals due to aseptic inflammation followed by bloodletting, serum enriched in erythropoietins was injected to them. Serum of dogs kept for 2 months at an altitude of 3,200 m or serum enriched in erythropoietins after the bleeding of normal dogs was used. As a result of administration of the serum, restoration of normal hemopoiesis was expedited. This indicated that after the lesion

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USSR

TILIS, A. YU., Sovetskoye Zdravookhraneniye Kirgizii, No 2, Mar/Apr 71, pp 6-10

substances formed which inhibited the formation of erythropoietins in the body, but did not interfere with the action of intact erythropoietins.

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USSR

UDC 533.6.011

KRAYKO, A. N., TILLYAYEVA, Moscow

"Construction of the Minimum Wave Drag Outline in a Nonuniform Supersonic Flow"

Moscow, Prikladnaya Matematika i Mekhanika, Vol 37, No 3, 1973, pp 469-487

Abstract: A study was made of the variation problem of the construction of the generatrix of a flat or axisymmetric body insuring minimum wave drag when there is flow by a nonuniform (nonisoentropic and nonisoenergetic) supersonic flow of an ideal (nonviscous and nonthermally conducting) gas in the case where a zone of sharp variation of the parameters retained (in the absence of discontinuities) along the current line, that is, the entropy and total enthalpy, falls in the region of definition of the desired outline. At the limit, the indicated zone degenerates into a tangential discontinuity. The investigation is limited to configurations (for example, nozzles or the afterbodies), for which there are no shock waves (including the bow shock) in the investigated region. The known solution [Yu. D. Shmyglevskiy, Hekotoryye variatsionnyye zadachi gazovoy dinamiki, M., Tr. VTs AN SSSR, 1963; A. N. Krayko, Variatsionnyye zadachi sverkhzvukovykh techeniy gaza s proizvol'nymi termodinamicheskimi svoystvami, M., Tr. VTs AN SSSR, 1963] obtained previously for nonuniform flows and giving a smooth (without internal breakpoints) optimal outline can not in such cases be realized and must be replaced by the solution for which the generatrix of

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USSR

KRAYKO, A. N., ET AL., Prikladnaya Matematika i Mekhanika, Vol 37, No 3, 1973, pp 469-487

the optimal body contains no less than one internal breakpoint. Since the configurations of this type can not be investigated using the transition used in the above-cited papers to the control outline, in order to obtain the necessary conditions of the extremum defining the shape of the optimal generatrix it is necessary to use the general method of Lagrange factors in the previously developed form [K. G. Guderley, et al., Teoriya optimal'nykh aerodinamicheskikh form., Moscow, Mir, 172-194, 1969; A. N. Krayko, PDM, Vol 28, No 2, 285-295, 1964; Vol 30, No 2, 312-320, 1966]. On the basis of the optimality conditions obtained, a numerical algorithm is developed and examples of the optimal generatrices of flat bodies are constructed in the case of a flow with a tangential discontinuity.

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USSR

KRAYKO, A. N., ~~TILLYAYEVA, N. I.~~, Moscow

"Solution of the Variation Problem of Constructing the Outline of the Composite Nozzle"

Moscow, Prikladnaya Matematika i Mekhanika, Vol 35, No 4, 1971, pp 619-632

Abstract: A solution was found to the variation problem of constructing the outline of the supersonic part of an optimal composite nozzle designed for operation in two different modes. The complete nozzle operates in the mode which is characterized by the larger pressure drop. The end section of the nozzle is retracted (or extended) in the mode with lower pressure drop. The maximum allowable length of the complete nozzle and the counterpressure determining each mode and the probabilities of using the complete nozzle or part of it are given. The nozzle design is optimized with respect to the average thrust. The necessary conditions under which the optimal outline can be constructed are obtained, and the corresponding numerical algorithm based on these conditions is developed. Examples are presented of optimal composite nozzles constructed using the indicated algorithm. They are compared with the optimal continuous nozzles designed for the average counterpressure. The evolution of the shape of the optimal composite nozzle in the entire range of possible values of the maximum allowable length is analyzed.

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USSR

UDC 541.15:678(744-746)-13

TASHMUKHAMEDOV, S. A., KARABAYEV, A. SH., TILLYAYEV, R. S., Tashkent Order of the Red Banner of Labor State University imeni V. I. Lenin

"Radiation Copolymerization of Vinyl Acetate with Vinyl Pyrrolidone"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 3, 1972, pp 54-56

Abstract: A study was made of the kinetics of copolymerization of vinyl acetate with vinyl pyrrolidone as a function of the dosage, radiation power, nature of the solvents and concentration of the initial mixtures. During copolymerization of vinyl acetate with vinyl pyrrolidone in the dose range from 0.1 to 1.0 m rads, a power of 70 rads/sec in the mass, methanol and benzene, significant conversion of the monomers is observed at doses of 0.8-1.0 m rads. The copolymer is enriched with vinyl pyrrolidone for all ratios of the initial components. The values of the copolymerization constants, the specific activity and the polarity found agree with the published data [Yu. D. Semchikov, et al., *Vysokomolek. soyed.*, B12, 381, 1970]. The yield of the copolymers synthesized in the mass with an integral dose of 0.5 m rads decreases from 94 to 34 percent with an increase in dose intensity from 6 to 207 rads/sec. This arises from an increase in the detachment rate of the growing chains. The exponent $n = 0.68$ in the equation $V = kI^n$ deviates from 0.5 toward higher values in connection with a decrease in the collision probability of the growing chains formed in the solid phase.

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1/2 009 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ACRYLOYLCYTISINE -U-
AUTHOR--(04)-MUSAYEV, U.N., MIRKHIDYATOV, M.N., TILLAYEV, R.S., USHANOY,
KH.U.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 264,394
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NR 1970,
DATE PUBLISHED--03MAR70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ALKALOID, CHEMICAL PATENT, ACRYLIC ACID, ACID CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/1854 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0132119
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0132119

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACRYLOYLCYTISINE IS PREPD. BY
TREATING CYTISINE WITH THE ACID CHLORIDE OF ACRYLIC ACID IN THE PRESENCE
OF SODA IN AN ORG. SOLVENT, E.G. CHLOROFORM, AT 65-70DEGREES.

UNCLASSIFIED

AZIMOV, S. A., MYALKOVSKIY, V. M., MURITDINOV, Kh., RASULKULOV, M. S.,
ABDULLAYEV, A. M., BEYSENBAYEV, R. U., GAVRILIN, Ye. V., TALIPOV, D. A.,
MULLAZHONOV, E. Zh., TILLAYEV, T., RAKHMANOV, Zh., UMEROV, R.,
ULINAYEVA, F. A., KHEN, E., YOLDASHBAYEV, T. S., Institute of Nuclear
Physics of the Academy of Sciences Uzbek SSR

"Study of the Characteristics of High-Energy Interactions of Pions and
Nucleons"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 36,
No. 8, Aug 72, pp 1626-1631

Abstract: Experimental data obtained at the Kum-Bel' High-Altitude
Station of the Physicotechnical Institute of the Academy of Sciences
Uzbek SSR are reported. The station is 3200 m above sea level. The
setup contains three series of wide-gap spark chambers, with effective
areas of 2 m² placed above and below the target. The Cerenkov spectro-
meter with total absorption and an ionization calorimeter with an area of
10 m² were used to measure the primary energy E₀. Up to the present time
experimental data obtained over 630 hours of operation of the device have
been processed, with a high-voltage pulse being supplied to the electrodes of
the spark chambers. Showers with an energy of >200 Gev generated in the target
were selected for analysis. The following ratio was obtained for the number
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USSR

AZIMOV, S. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya,
Vol 36, No 8, Aug 72, pp 1626-1631

of primary charged N_c and neutral N_n particles: $N_c/N_n = 2.3 \pm 0.3$;
this shows that the proportion of charged particles is ~34% of all nuclear
active particles, thus making it possible to study pion-nuclear collisions
by comparing the characteristics of the interaction of charged and neutral
primary particles. A weak functional dependence between the inelasticity
coefficient $\langle K_{\pi\pi} \rangle$ and the atomic number of the target nucleus and a strong
functional dependence between this coefficient and the nature of the
primary particles were obtained for interactions of hadron with $E_0 > 200$
Gev. $\langle n_s \rangle$ is almost a logarithmic function of E_0 . The average multipli-
city in the interaction of pions with neutrons in paraffin is identical
within the experimental limit. A considerable azimuthal effect was ob-
served for the angular distribution of secondary particles. The azimuthal
effect has its greatest value for showers with $n_s = 8-15$, or a multipli-
city close to average.

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USSR

UDC 539.171.017

ABDULLAYEV, A. M., AZIMOV, S. A., BEYSEMBAYEV, R. U., BELITSKIY, M. T.,
MULLIZHANOV, E. ZH., MYALKOVSKIY, V. M., TALIPOV, T. A., ~~TILLYAYEV, T.~~
UMEROV, R., KHEN, E., and YULDASHBAYEV, T. S.

"Study of Characteristics of Inelastic Interactions of Cosmic-Ray Particles
in the 10^{11} to 10^{12} -ev Energy Range"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10,
Oct 71, pp 2065-2068

Abstract: Experiments that were performed at the high-altitude test station
(3,200 m.) at Kum-Bel' in Uzbekistan are described. The purpose of the exper-
iments was to investigate the angle of arrival and the energy characteristics
of interactions of pions and nucleons with light and heavy nuclei at 2×10^{11}
to 2×10^{12} ev and the mechanism of generating muons at energies above 2×10^{12}
ev. Equipment consisted of spark chambers, located above and below the target
(paraffin wax, carbon, and iron), a Čerenkov spectrometer of full absorption,
and an ionization calorimeter. This complex method of measurements was found
convenient for use in various modes of operation. A detailed description of
various parts of the installation and their disposition is given in the paper.
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USSR

ABULLAYEV, A. M., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2065-2068

Joint operation of ionizing calorimeters and spark chambers is normally difficult because of the need for high voltage on the calorimeter electrodes, combined with the time lag of the input pulse from the spark chambers, amounting to over 20 microseconds. This difficulty was avoided in the present experiments by storing pulses in memory cells, with the subsequent input of a high-voltage pulse of about 120 kv. Operation was controlled by a master-pulse, prior to which all parts of the equipment were kept inoperative.

Results of 200 hours of the joint operation of a Čerenkov spectrometer and ionizing calorimeter, with graphite used as the target, have been processed so far. For analysis, showers with energy above 1.5×10^{11} ev were selected, 130 of them having been observed. The ratio of charged to neutral nucleons were determined and, from it, the fraction of charged pions of the total nucleus-active stream of particles. The inelastic coefficient for the formation of Σ^0 -mesons was computed from the experiments related to the interaction of neutral particles with nuclei of graphite.

It is concluded that the combination of ionizing calorimeter with Čerenkov spectrometer of full absorption for the simultaneous determination of energy of primary particles made it possible to determine the fraction of

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USSR

ABULLAYEV, A. M., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya,
Vol. 35, No 10, Oct 71, pp 2065-2068

energy supplied by the ionizing particles γ , since a Čerenkov spectrometer measures only the energy emitted by relativistic particles. It was found that for the mean energy of primary particles of 350 Gev the energy part lost on nuclear fissions in the spectrometer, with CCl_4 as the light emitter, is $\gamma = 0.25$,

CSO: 1862-W

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Acc. Nr.: AT0046927

Ref. Code: UR 0000

USSR

UDC 622.765

PANU, ZH., and TILIE, R.

"The Kinetics of Flotation"

Leningrad, VIII Mezhdunar. Kongress po Obozashch. Polezn. Iskopayemykh -- Sbornik (Eighth International Congress on Concentration of Minerals, 1968 -- Collection of Papers Presented), Vol 2, 1969, pp 487-499 (from Moscow, Referativnyy Zhurnal -- Metallurgiya, No 1, 1970, Abstract No 1V105 by A. Shmeleva)

Translation: Flotation kinetic equations were derived without use of a priori hypotheses. In this case, the order of flotation equations were obtained as a consequence of the existence of determined correlations between individual separation functions. The formulas are valid only in the simplest case of ore flotation. (8 illustrations; Belgium)

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Recorders and Sensors

USSR

UDC 621.323

TILO, R. A., YAKOBSON, V. S.

"Four-Channel Device for Tape Recording and for Introducing Low-Frequency Signals into a Digital Computer"

Moscow, Pribory i tekhnika eksperimenta, No 4, Jul-Aug 70, pp 106-109

Abstract: This laboratory device not only records information on magnetic tape but transforms the recorded signals into a digital code applied directly to a digital computer. It simultaneously records four processes and is superior in many other ways to single-channel systems of similar type, requiring no elaborate switching mechanism or analog-digital converter. For recording, it uses two GU-4 universal heads. The four-channel modulator consists of a transistorized sawtooth oscillator and a diode regenerative comparator circuit which compares the sawtooth voltage with the input signal voltage. A schematic of the modulator and the recorder current forming circuit is given and the operation of the arrangement explained. An eleven-digit binary code consisting of two numbers is used between the recording device and the BESM-3M digital computer: the first showing the state of the counter, the second giving the numbers of the channels over which the signal came. A curve of the digital codes as a function of the input voltage shows the variation to be substantially linear. It is asserted that the general accuracy of the

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USSR

TILO, R. A., et al., Pribory i tekhnika eksperimenta, No 4, Jul-Aug 70, pp 106-109

device is completely satisfactory and that the device itself, which has been used for processing electroencephalographic data, has proved to be reliable and simple in operation.

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USSR

UDC 615.471:[614.777+628.19]074:543.42.062

SINEL'NIKOV, V. Ye., TIMAKHOV, O. N., ININ, Yu. S., IKONNIKOVA, S. V., GIKKEL', A. A., GONCHAROV, A. T., AFONIN, V. I., PERSIYANTSEVA, V. B., and SOKOLOV, B. K., Central Design Bureau and Pilot Plant, USSR Academy of Medical Sciences, Moscow and Institute of Biology of Inland Waters, USSR Academy of Sciences, Borok, Yaroslavl Oblast

"A Multipurpose Spectrofluorimeter to Study Natural and Polluted Water"

Moscow, Gigiyena i Sanitariya, No 1, 1973, pp 65-68

Abstract: The akva-MF spectrofluorimeter developed by the authors can be used for rapid determination of individual organic and mineral compounds present in water, for automatic regulation of fluorescent substances in a stream, for detection in lakes and seas of water masses differing in chemical composition and origin, and for study of the conversion and breakdown of compounds under the influence of biological and physicochemical factors. Analyses can be made in the laboratory, in the field, or on a research vessel. The spectrum of fluorescent compounds can be obtained directly at the sampling site. The apparatus is a single-beam recording spectrofluorimeter designed to function in the visible and UV regions of the spectrum. With the use of interchangeable attachments, it can record spectra of fluorescence, excitation, and phosphorescence in a solution as well as substances separated in chromatographic zones on paper.

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USSR

TIMAKOV, V., President, Academy of Medical Sciences USSR

"Mysterious Phenomenon: Discovery or Error? -- The Responsibility of a Scholar"

Moscow, Literaturnaya Gazeta, No 31, 29 Jul 70, p 12

Abstract: The reexamination of the R. A. Kuleshova effect indicates the need to protect the public from false and sensational, as well as scientifically unsound claims. Experiments with color detection by fingers were described at the end of the last century by several Russian psychiatrists. Nowadays mysterious experiments involving hypnosis, trance, and other phenomena are described and theories have emerged. It is not too serious when dilettantes describe seances, but when scholars or respected researchers issue publications in newspapers and journals, this represents an infringement of one's responsibility as a scholar. Examples of such irresponsibility can be drawn from various fields of psychology. There is hope, however, that just as certain laws of science stand unquestioned, parapsychology will reach the same state. For this to happen, the experimental work has to be of high accuracy and reliability. The young researchers entering the field must have clear in mind the aim of their research and the future of their

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USSR

TIMAKOV, V., Literaturnaya Gazeta, No 31, 29 Jul 70, p 12

work. The researchers now in the field must refine their experiments so that errors of method can be eliminated and erroneous or misleading publications can be avoided. This will be harder to achieve in the field of parapsychology than in the traditional sciences. It must, however, be remembered that with the modern means of information dissemination, millions and tens of millions of people can be misguided, particularly when such unreliable data are reported under the name of a professional scholar.

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USSR

UDC 576.858.74.06

TIMAKOV, V. D., KAGAN, G. Ya.

L-formy bakteriy i semeystvo Mycoplasmataceae v patologii (Bacterial L-Forms and the Part Played by the Mycoplasmataceae Family in Pathological Processes), Moscow, Meditsina, 1973, 392 pp, 2,500 copies printed

Abstract

The monograph summarizes the results of many years of experimentation and observation by the authors and their colleagues and cites data in the literature on the most important division of modern mycoplasmatology: the part played by Mycoplasma and bacterial L-forms in pathological processes.

Part One -- L-Forms of Microorganisms and Their Role in Pathological Processes -- presents a detailed description of the factors and conditions of induction of L-forms in vitro and of their biological characteristics and of the stabilization of L-forms. Reversion of L-forms to bacteria and the biological characteristics of these bacteria are described.

The book provides most complete information on the pathogenic potential of L-forms of microorganisms, on L-form induction, on the persistence of L-forms and their reversion in vivo and in cell culture, on pathogenic factors and pathological responses to experimental infection, and on experimental models of pathological processes involving various species of L-form microorganisms. Of particular interest are materials analyzed by the authors concerning the isolation and identification of bacterial L-forms and other forms

USSR

TIMAKOV, V. D., KAGAN, G. Ya., *Meditsina*, 1973, 392 pp, 2500 copies printed of microorganisms devoid of cell walls from the pathological matter of patients with septicemia, septic endocarditis, rheumocarditis, purulent meningitis, inflamed genitourinary tract, and other human diseases.

Part Two -- The Family of Mycoplasmataceae and Its Role in Pathological Processes -- discusses the biological characteristics of Mycoplasmataceae and the comparative biology of bacterial L-forms and mycoplasmas, their phylogeny and taxonomy. Pathogenic potential of mycoplasmas in cell culture and in vivo, pathological reactions and experimental models of pathological processes caused by various mycoplasma species; pathogenesis, clinical aspects, epidemiology, epizootiology of mycoplasma infections (respiratory diseases, diseases of the genitourinary system, etc.) and laboratory diagnosis are presented in detail in this part of the monograph. The possible significance of mycoplasma in leukemia and the problem of combined mycoplasma-viral infection are also analyzed.

The book essentially deals with the clarification of the part played by L-forms and mycoplasma in human and animal pathology.

The monograph is intended for biologists, microbiologists, virologists, medical workers, epidemiologists and veterinarians.

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USSR

TIMAKOV, V. D., KAGAN, G. Ya., Meditsina, 1973, 392 pp, 2500 copies printed

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TIMAKOV, V. D., KAGAN, G. Ya., Meditsina, 1973, 392 pp, 2500 copies printed

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TIMAKOV, V. D., KAGAN, G. Ya., Meditsina, 1973, 392 pp, 2500 copies printed

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TIMAKOV, V. D., KAGAN, G. Ya., Meditsina, 1973, 392 pp, 2500 copies printed

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USSR

UDC 576.858.75.083.35:576.858.75.095.383

TIMAKOV, V. D., ZUYEV, V. A., and PETERS, V. V., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, USSR Academy of Medical Sciences, Moscow

"Latent Infection of Cell Cultures Not Sensitive to the Cytopathic Effect of a Virus. 1. Reaction of L Cell Cultures to Infection With Influenza Virus Type A"

Moscow, Voprosy Virusologii, No 3, May/Jun 71, pp 281-185

Abstract: Influenza A viruses (WSN, PR8) do not reproduce in L cells and do not produce any cytopathic effect; rather, they exert a stimulating effect. The study of the properties of L cells was undertaken to ascertain differences between intact and infected cells. In particular, the capability of L cells to adsorb WSN virus and to maintain replication of the latter was studied. It was found that L cells can adsorb 90-95% of the virus. As a rule, intact L cells did not maintain replication of WSN and PR8 influenza viruses, as shown by results obtained from a study of the infectious and hemagglutinin titers. However, differences were found between intact and infected L cells as far as their proliferation patterns and mitotic indices were concerned. WSN-infected L cells had four times the mitotic index of normal cells. The observed changes are of hereditary character. WSN-infected L cells retained a high resistance to inoculation with homologous and unrelated viruses

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USSR

TIMAKOV, V. D., et al., Voprosy Virusologii, No 3, May/Jun 71, pp 281-285

(for instances herpes). The possibility of a latent virus carrier state in such cells is discussed. It was concluded that infection of insensitive cells by a virus leads to a change in some cellular properties of hereditary character, which is particularly important for the possible formation of a latent form of viral infection in such cells. This is confirmed by data on the increased dimensions of cells and nuclei during the viral transmission process, as well as by the enhanced vital capacity of such cells.

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1/4 039
UNCLASSIFIED
TITLE--MAIN ACHIEVEMENTS OF THE USSR ACADEMY OF MEDICAL SCIENCES OVER A 25
YEAR PERIOD -U-
AUTHOR--TIMAKOV, V.D.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 6, 1970,
PAGES 5-22
DATE PUBLISHED-----70
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, BIOLOGICAL AND MEDICAL
SCIENCES
TOPIC TAGS--MEDICINE, BIOLOGY, PUBLIC HEALTH, LENIN PRIZE, STATE PRIZE,
HONORARY TITLE AWARD, ENDOCRINOLOGY, SURGERY, ONCOLOGY, ACADEMIC
PROFESSIONAL STAFF SIZE/(U)NATIONAL ACADEMY OF SCIENCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0726
STEP NO--UR/0248/70/025/006/0005/0022
CIRC ACCESSION NO--AP0137801
UNCLASSIFIED

2/4 039

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137801

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT THE PRESENT TIME, THE USSR AMS IS A MAJOR RESEARCH INSTITUTION CAPABLE OF SOLVING THE MOST COMPLEX PROBLEMS IN MEDICINE, BIOLOGY AND PUBLIC HEALTH. WITHIN THE SYSTEM OF THE AMS THERE ARE 29 SCIENTIFIC RESEARCH INSTITUTES AND FIVE INDEPENDENT LABORATORIES. MANY OF THE ACADEMY INSTITUTES ARE MAJOR INSTITUTIONS WELL KNOWN NOT ONLY IN OUR COUNTRY BUT ALSO ABROAD. AT WORK IN ACADEMY INSTITUTES ARE 3,728 SCIENTIFIC WORKERS, OF WHOM 586 ARE DOCTORS OF SCIENCES AND 2,252 CANDIDATES OF SCIENCES. AT THE PRESENT TIME THERE ARE 110 ACADEMICIANS AND 156 CORRESPONDING MEMBERS OF THE USSR AMS. THIS INCLUDES 12 ACADEMICIANS AND TWO CORRESPONDING MEMBERS OF THE USSR ACADEMY OF SCIENCES, EIGHT ACADEMICIANS AND FIVE CORRESPONDING MEMBERS OF ACADEMIES OF OTHER REPUBLICS. A LARGE GROUP OF OUR SURGEONS RECEIVED LENIN PRIZES FOR DEVELOPMENT OF HEART SURGERY (A. N. BAKULEV, B. V. PETROVSKIY, A. A. VISHNEVSKIY, P. A. KUPRIYANOV, YE. N. MESHALKIN), FOR DEVELOPMENT OF LUNG SURGERY (N. M. AMOSOV, N. V. ANTELAVA, L. K. BOGUSH, I. S. KOLESNIKOV, V. I. STRUCHKOV, B. E. LINBERG), FOR THE CREATION OF ANEW METHOD OF TRANSFUSING BLOOD FROM CADAVERS (S. S. YUDIN, V. N. SHAMOV). LENIN PRIZES WERE CONFERRED UPON N. N. PETROV, ONE OF THE FOUNDERS OF SOVIET ONCOLOGY; N. V. KONOVALOV, FOR RESEARCH DEALING WITH HEPATOCEREBRAL DYSTROPHY; A GROUP OF SOVIET OTORHINOLARYNGOLOGISTS (A. M. KOLOMIYCHENKO, V. F. NIKITINA, N. A. PREOBRAZHENSKIY, S. M. KHECHINASHVILI) FOR PERFECTING AND INTRODUCING INTO PRACTICE SURGERY TO RESTORE HEARING IN THE PRESENCE OF OTOSCLEROSIS.

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137801

ABSTRACT/EXTRACT--LENIN PRIZES WERE CONFERRED UPON THE WORKS OF THE OUTSTANDING SOVIET PATHOLOGIST, I. V. DAVYDOVSKIY WHO ADDED MUCH TO UNDERSTANDING OF INFECTIOUS PATHOLOGY AND PATHOLOGICAL ANATOMY IN GENERAL; N. G. KORNEV, FOR HIS DEVELOPMENT OF METHODS OF SURGICAL MANAGEMENT OF TUBERCULOSIS OF BONES AND JOINTS. A. A. LETAVET, P. D. GORIZONTOV, A. K. GUSKOVA, N. A. KRAYEVSKIY, AND N. A. KURSHAKOV ARE ALSO RECIPIENTS OF THE LENIN PRIZE. FOR A CYCLE OF WORKS ON PRENATAL PROPHYLAXIS OF FETAL PATHOLOGY AND PERINATAL MORALITY, THE STATE PRIZE HAS CONFERRED UPON L. S. PERSIANINOV, K. V. CHACHAVA, P. G. SVETLOV, N. L. GARMASHEVA. SINCE THE EXISTENCE OF THE ACADEMY, A LENIN PRIZE WAS CONFERRED UPON 37 PEOPLE, THE STATE PRIZE UPON 83; 108 ACADEMY SCIENTISTS RECEIVED THE TITLE OF HONORED SCIENTIST. THE HIGHEST STATE AWARD, THE TITLE OF HERO OF SOCIALIST LABOR WAS CONFERRED UPON 36 PEOPLE. AT THE BRAIN INSTITUTE, USSR AMS, UNDER THE GUIDANCE OF S. A. SARKISOV, A COMPREHENSIVE STUDY HAS BEEN MADE OF THE CYTO AND MYELOARCHITECTONICS OF THE CEREBRAL CORTEX AND SUBCORTICAL STRUCTURES, THE PATTERNS OF PHYLOGENY AND DISTINCTIONS OF ORGANIZATION OF THE HUMAN BRAIN HAVE BEEN DISCLOSED. IN THE LAST 3-4 YEARS THE LEVEL OF RESEARCH IN PHYSIOLOGY OF THE ENDOCRINE SYSTEM AND ENDOCRINOLOGY AS A WHOLE HAS RISEN SIGNIFICANTLY.

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137801

ABSTRACT/EXTRACT--AT THE INSTITUTE OF EXPERIMENTAL ENDOCRINOLOGY AND HORMONE CHEMISTRY, UNDER THE GUIDANCE OF N. A. YUDAYEV, SOME IMPORTANT RESEARCH HAS BEEN DONE WHICH RESULTED IN FUNDAMENTALLY NEW CONCEPTIONS OF THE BIOGENESIS OF STEROIDS IN THE ADRENALS, THE MEANS OF CONVERSION OF PRECURSORS INTO CORTICOSTEROIDS HAVE BEEN DISCLOSED, THE SPECIFICS OF THE MECHANISM OF ACTION OF SEX HORMONES ON RNA SYNTHESIS HAVE BEEN DETERMINED. THE FIRST USSR SUCCESSFUL OPERATIONS ON THE HEART SEPARATED FROM THE CIRCULATION (ON THE "DRY HEART") ASSOCIATED WITH HYPOTHERMIA AS WELL AS INVOLVING THE USE OF A DOMESTIC EXTRACORPOREAL CIRCULATION MACHINE, AND WITH A COMBINATION OF EXTRACORPOREAL CIRCULATION AND HYPOTHERMIA WERE PERFORMED AT THE INSTITUTE OF SURGERY IMENI A. V. VISHNEVSKIY (A. A. VISHNEVSKIY, DIRECTOR). AN ORIGINAL TECHNIQUE HAS BEEN DEVELOPED FOR ISOLATED EXTRACORPOREAL CIRCULATION (REGIONAL PERFUSION) OF THE BRAIN IN THE PRESENCE OF HYPOTHERMIA, WHICH PERMITS OPERATING ON THE HEART, SEPARATED FROM THE CIRCULATION, FOR 20-30 MINUTES WITHOUT USING DONOR BLOOD OR BLOOD SUBSTITUTES.

UNCLASSIFIED

Acc. Nr:

AP0036809

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i
Immunobiologii, 1970, Nr 1, pp. 12-18

CONCERNING PATHOGENESIS OF TYPHOID-PARATYPHOID
CARRIER STATE

A. F. Bilibin, V. D. Timakov, V. M. Bondarenko, L. V. Ivanova

A study was made of the process of interaction of intracellular forms of typhoid-paratyphoid bacilli with the bone marrow cells of the patients and carriers. Bone marrow was obtained by trephine-biopsy of the ileum and cultivation in vitro in special chambers of МБИ-12 microscope. Primary puncture material, cellular detritus and cultural fluid were examined bacteriologically for confirmation of specificity of the process and of the changes recorded in the cells under study in the bone marrow cultures. Investigations were carried out according to the scheme of analysis for isolation of bacterial and L-forms of the causative agent. A method of phasic-contrast microscopy in combination with fluorescent-serological method was used in this work. Bone marrow proved to be nonsterile in 13 of 20 patients and

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carriers examined. A morphological picture of the bone marrow of chronic carriers was characterized by the presence of a great number of macrophagic elements, infected in a number of cases by forms of the causative agent differing in morphological properties. The identified myelostains were represented by 3 typical typhoid cultures, 4 stable L-forms and 6 mixed cultures of typhoid-paratyphoid bacilli. Cells affected by these bacilli usually perished by the end of the 5th—8th day of bone marrow incubation; as to the uninfected bone-marrow elements, they formed a cellular unistratum, in individual cases remaining viable for 58 to 60 days. Experimental results lead to a supposition that chronic typhoid-paratyphoid carrier state is a general process, in which a definite role is played by bone marrow.

D. n .

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19721726

USSR

UDC 616.9-078,576.8.095.57

TIMAKOV, V. D., Academician, and LEVASHEV, V. S., Professor, Moscow

"Altered Forms of Microorganisms and Human Pathology"

Moscow, Sovetskaya Meditsina, No 4, 1972, pp 3-6

Abstract: Recent findings on phenotypically and genotypically altered forms of bacteria significant to human pathology are discussed. Morphologically similar L-form bacteria, all polymorphic with spherical constituents, have been obtained from most species of bacteria. Their pathogenic properties differ from those of the initial species, as do their metabolic processes. Genetically altered L-forms are stable, while phenotypically altered L-forms can revert back to their initial form if the causative environmental factor is removed. They have been obtained from humans with such diseases as rheumatoid arthritis, meningitis, septic endocarditis, and chronic diseases of the urogenital tract. They are difficult to identify, and their etiological role is unclear, though some investigators attribute redidivism of some infectious diseases to these forms. They may develop under the effect of human defense mechanisms against the initial pathogens. Atypical bacterial forms are produced with the use of antibiotics and sulfanilamides. Morphologically similar to parent cells, they differ only in biological properties.

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USSR

TIMAKOV, V. D., and LEVASHEV, V. S., Sovetskaya Meditsina, No 4, 1972,
pp 3-6

Classical identification methods must be revised, since they are inapplicable to atypical bacteria. Their changes are genetic, resulting primarily from ribosome mutations. Another altered form is the mycoplasma, which has biological properties similar to those of L-forms, and has been studied thoroughly in bird and animal pathology. Its role in human primary atypical pneumonia has been substantiated. Further study on the properties and human effects of these altered forms is necessary.

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USSR

UDC 546.651:542.61:547.558

RUSINA, M. N., POLIKARPOV, Yu. M., YAROSHENKO, G. F., and TIMAKOVA, L. M.

"Aminosubstituted Phosphine Oxides as Extractants of Rare Earth Elements"

Leningrad, Zhurnal Obshchey Khimii, Vol 43(105), No 2, Feb 73, pp 238-242

Abstract: Synthesis of aminosubstituted phosphine oxides containing phosphoryl and amino groups in the molecule was carried out. Their ability to extract rare earth elements [REE] was studied. The structure of such reagents makes it possible to form chelate rings with metal salts, with both functional groups participating; this makes the complexes very stable and selective. It was shown that substituting an octyl radical for an ethyl group increases the extractational capacity of the material, probably due to the increase in the basicity of the nitrogen atom and better solubility of the complex in the organic phase. β -Aminosubstituted phosphine oxide extracts the REE much better than α -aminosubstituted ones, due to a greater strength of the six membered chelate ring as compared to a five membered one. The coefficient of extraction of REE by above reagents is about 0.1, while for the Ca^{2+} , Mg^{2+} , Al^{3+} , Fe^{3+} and Cr^{6+} they are less than 0.01.

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1/2 018
UNCLASSIFIED
TITLE--CHARGE CONSTANCY IN DARK CURRENT MINIMUM POINTS IN HIGH RESISTANCE
Cadmium Sulfide Single Crystals -U-
AUTHOR--(02)--TIMAN, B.L., KARPOVA, A.P.
PROCESSING DATE--04DEC70
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1554-6
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--CADMIUM SULFIDE, SINGLE CRYSTAL, ELECTRIC FIELD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/0163
STEP NO--UR/0181/70/012/005/1554/1556
CIRC ACCESSION NO--AP0129419
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129419

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMATION OF CHARGE WAS STUDIED IN
COS CRYSTALS WITH RESISTIVITIES 10 PRIME11-10 PRIME12 OHM-CM IN A CONST.
ELEC. FIELD AT 35DEGREES. THE MAGNITUDE OF CHARGE WAS DETD. FROM THE
AREA UNDER THE CURVE OF THE TIME DEPENDENCE OF DISCHARGE CURRENT. THE
ROLE OF THE ELEC. FIELD IS NOT ONLY THAT OF TRANSPORT OF CHARGED
CARRIERS. FACILITY: VSES. NAUCH.--ISSLED. ISNT. MONOKRIST.,
KHARKOV, USSR.

UNCLASSIFIED

172 014
TITLE--NONLINEAR INTERACTION OF WAVES DURING ULTRASOUND AMPLIFICATION IN
CADMIUM SULFIDE -U-
AUTHOR--(02)-KOMAR, V.K., TIMAN, S.Ye.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(1), 304-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--CADMIUM SULFID, WAVE FRONT, ULTRASONIC WAVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/0221
CIRC ACCESSION NO--AP0055017
STEP NO--UR/0181/70/012/001/0304/0305
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13SEP70

CIRC ACCESSION NO--AP0055017

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE EFFECT WAS OBSD. OF INCREASED AMPLITUDE OF 1 WEAK ULTRASONIC WAVE IN THE PRESENCE OF ANOTHER STRONGER WAVE, BOTH WAVES PROPAGATING SIMULTANEOUSLY IN COS. THE DEPENDENCE OF AMPLIFICATION OF THE SIGNAL ON THE INTENSITIES OF BOTH WAVES AND THE DEPENDENCE OF AMPLIFICATION ON COND. ARE GIVEN. THE OBSD. EFFECT CAN BE EXPLAINED BY A COMPLEX NONLINEAR INTERACTION OF THE SIGNALS WITH WAVES OF SUM AND DIFFERENCE FREQUENCIES.

UNCLASSIFIED

031
UNCLASSIFIED
TITLE--EFFECTS RELATED TO THE INTENSIFICATION OF OBLIQUE ACOUSTIC NOISE IN
CADMIUM SULFIDE -U- PROCESSING DATE--23OCT70
AUTHOR--(02)--KOMAR, V.K., TIMAN, B.L.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 488-90
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ACOUSTIC NOISE, CADMIUM SULFIDE, SINGLE CRYSTAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1997/1705
CIRC ACCESSION NO--AP0120417
STEP NO--UR/0449/70/004/003/0488/0490
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120417

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT.

IF THE COND. OF A CDS SINGLE CRYSTAL LIES IN A CERTAIN RANGE, THE FIELD DEPENDENCE OF THE INTENSIFICATION OF NOISE IN SUCH A CRYSTAL POSSESSES 2 MAX. THE 1ST MAX. IN BONDED WITH THE INTENSIFICATION OF "STRAIGHT" WAVES, WHICH PROPAGATE ALONG THE FIELD DIRECTION PARALLEL TO THE BASIS PLANE AND THE 2ND ONE (OCCURRING IN HIGHER FIELDS) IS BONDED WITH THE INTENSIFICATION OF "OBLIQUE" WAVES, I.E., THE ANGLE BETWEEN THE WAVE PROPAGATION DIRECTION AND THE BASIS PLANE IS 60DEGREES. THE CURRENT, INTENSIFICATION, AND NOISE CHARACTERISTICS OF CDS SINGLE CRYSTALS WERE STUDIED EXPTL.; THE ANOMALIES FOUND, E.G., IN THE FIELD DEPENDENCE OF THE AMPLITUDE OF TRANSFORMED MODES OF NOISE OSCILLATIONS, ARE RELATED TO THE PRESENCE OF OBLIQUE NOISE.

UNCLASSIFIED

USSR

KOMAR', V. K.: TIMAN, B. L., All-Union Scientific Research Institute of Monocrystals, Khar'kov

"The Interaction of an Ultrasonic Wave With Acoustic Noise in Amplifying CdS"

Leningrad, Fizika Tverdogo Tela, Vol 12, No 6, June 1970, pp 1619-1620

Abstract: As is known, the presence of acoustic noise in piezo semi-conductors exerts a substantial effect upon the amplification of an ultrasonic signal. One of the mechanisms of this influence is connected with the nonlinear interaction of the signal with acoustic noise; however, this mechanism has practically not been studied at all, and it is of interest to study it in detail. In the present study, with a fixed field and with fixed conductivity of the specimen, an experimental study has been made, on one hand, of the influence of acoustic noise upon signal amplification, and, on the other hand, of the change of the noise level in case of the synchronous propagation of noise along the specimen with the ultrasonic signal.

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USSR

UDC 621.382.2

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TIMAN, B.L., FESENKO, V. M.

"Transient Processes in a Dielectric Diode with Completely Ionized Donors with Small Step-By-Step Voltage Change"

Perekhodnyye protsessy v dielektricheskom diode s polnost'yu ionizirovannymi donorami pri malom stupenchatom izmenenii naprazheniya. Redkollegiya zh. "Radiotekhn. i elektronika," AN SSSR (cf. English above. Editorial Board of the Journal "Radio Engineering and Electronics," Academy of Sciences, USSR), Moscow, 1969, 8 pp, ill. bibliography, 3 names. (from RZh-Elektronika i yeye primeneniye, No 4, Apr 70, Abstract No 4B112 DEP)

Translation: An explicit solution is obtained by the method of a Laplacian transform of the problem of the build-up in time of a current resulting from the electrons injected into the dielectric during the supply to the electrodes of a small (in comparison with the d-c voltage) "step" voltage in the case of the presence of
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USSR

TIMAN, B. L., et al, Perekhodnyye protsessy v dielektricheskom diode s polnost'yu ionizirovannymi donorami pri malom stupenchatom izmenenii naprazheniya. Redkollegiya zh. "Radiotekhn. i elektronika" AN SSSR, 1969, 8 pp, ill. bibliography, 3 names. (from RZh-Elektronika i yeye primeneniye, No 4, Apr 70, Abstract No 4B112 DEP)

completely ionized donors. In the process, the diffusion current is not taken into account. It is shown that in proportion to the increase of the concentration of donors, the oscillatory character of the build-up of the steady-state current is gradually smoothed and the distinction between the steady-state and the smooth is reduced after the inclusion of the "step" voltage by the current.
3 ref.

2/2

Atmospheric
Physics

FIELD INSTRUMENT FOR SEMIAUTOMATIC TEMPERATURE PROFILE MEASUREMENTS

UDC 531.508.29

Article by D. F. Yanovskiy, Institute of Physics of the Atmosphere, Moscow, Meteorology and Hydrology, Moscow, No 4, April 1971, submitted 11 February 1970, pp 105-108

This article contains a description of a semi-automatic gradient meter for measuring air temperature gradients which is structurally simple and reliable in operation. The thermometer permits measurement of the temperature difference in the 0.01-6° C range with a mean error of 5.5 percent.

The measurements of the air temperature profiles in the ground layer of the atmosphere using existing equipment either have low accuracy and are not automated [5] or they are taken with high accuracy and are automated but the equipment is complex to operate and requires highly qualified service personnel [1-3, 6, 7]. In a number of cases this complicates its use under field conditions.

A device is described below for measuring air temperature gradients.

The instrument is structurally simple and simple to operate. It operates reliably under field conditions, and it permits temperature differences to be measured in the range from 0.01 to 6° C with a mean error of 5.5 percent.

The proposed gradiometer consists of four basic units (Figure 1):

1. Temperature ranges — aspiration resistance thermometers;
2. Measuring circuit — unbalanced bridge;
3. Automatic interlocking unit of the sensors;
4. Recorder — DC pen recorder M-373/1.

The temperature ranges are copper-ferrous resistance thermometers ($R = 500 \pm 0.5$ ohms at 0°C). Aspiration is realized across a two-shaft feed-action protect with a rate of about 4 m/sec using the PDZ-1.1 electric motor.

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USSR

UDC 8.74

SHCHUKINA, I. A., TIMASHEV, A. L.

"Mathematical Statement of the Exchange Problem and Its Execution on a Computer"

V sb. Ekon.-mat. metody i programir. plan.-ekon. zadach (Mathematical Economic Methods and Programming Economic Planning Problems--collection of works), Moscow, 1972, pp 228-233 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V501)

Translation: A study is made of a class of problems arising in operations research. These problems arise when organizing exchange, in the case where for one reason or another we cannot freely sell the material values available to us. The clearest examples of such problems from our activity are the problems of exchange of residential area, the problems arising in international book exchange.

USSR

OLENSKIY, V. A., TIMASHEV, R. G.

UDC 621.375.8

"Problem of Optimizing the Noise Characteristics of a Multifrequency Parametric System"

Materialy nauchno-tekhni konferentsii. Leningr. elektrotekh. in-ta svyazi. Vyp.3
(Materials of the Scientific and Technical Conference. Leningrad Electrotechni-
cal Communications Institute. Vyp. 3), Leningrad, 1970, pp 190-195 (from RZh-
Radiotekhnika, No 8, Aug 70, Abstract No 8 D264)

Translation: The problem of optimizing the noise characteristics of a multi-
frequency parametric system is formulated. Optimization equations are obtained
the solution of which permits determination of the conditions insuring minimi-
zation of the noise/signal ratio at the system output for given power amplifi-
cation of the signal.

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USSR

TIMASHEV, S. A.

UDC 539.3

"Two New Problems in the Reliability of Smooth and Reinforced Shells"

V sb. Probl. nadezhnosti v stroit. proyektir. (Problems of Reliability in Structural Design -- Collection of Works), Sverdlovsk, 1972, pp 235-245 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V123)

Translation: The problem of the reliability of a thin smooth and ribbed shell under corrosion conditions is discussed. In considering the smooth shell it is assumed that its thickness is a linear function of time $[h = h_0(1 - \alpha t)]$. h_0 is the initial thickness of the shell, which is a random quantity with a known distribution function, α is a random coefficient. The problem reduces to the construction of a reliability function for a given period of service throughout which the corrosion medium acts constantly. Loss of stability of the shell is taken as the criterion for breakdown. The ribs are eroded in considering the reinforced shell. Total normal deflection of points of the median surface are taken as a parameter for quality. The initial deflection is a random function and the author solves the problem using the condition of the existence of a limiting given value of the total deflection.

V. M. Tolkachev.

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USSR

TIMASHEV, S. F., Institute of Physical Chemistry, Academy of Sciences USSR, Moscow

"Thermal Ionization of 'Deep' Centers in the Region of a Space Charge in Semiconductors"

Leningrad, Fizika Tverdogo Tela, Vol. 14, No. 1, Jan 72, pp 171-174

Abstract: Radiation electron transitions from the conductivity zone to "deep" impurity centers within the semiconductor in an electric field in the region of a space charge are discussed. A center is considered deep if its ionization energy $E_I^0 > \hbar\omega_0$, where ω_0 is the Debye frequency of phonons. Electron transitions to levels outside the conductivity zone boundary are taken into account in the calculation. It is shown that with a high electric field strength F near the surface region ($F \approx 10^5$ v/cm), the probability of ionization can rise considerably with an increase in F due to electron transitions to these levels. The ionization energy in the transition to these levels is less than the corresponding value for impurity centers within the semiconductor. It is concluded that for parameters such as those for a deep Cu center in Ge a consider-

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TIMASHEV, S. F., Fizika Tverdogo Tela, Vol. 14, No. 1, Jan 72, pp 171-174

able increase in the ionization rate of the impurity level may occur in a strong electric field that is associated with radiationless electron transitions to these levels beyond the boundary of the conductivity zone. This increase in the rate of thermal ionization of impurity centers in a strong electric field is also observed in the study of the kinetics of the field effect in semiconductors without an oxide film. It follows that if the relaxation in conductivity thus observed is determined by a deep surface level, an exponential increase in relaxation with an increase in the magnitude of F^2 should be observed upon the appearance of strong depleting fields in the surface region, and such an effect has in fact been observed.

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USSR

UDC 669.017:539.216.2

TIMASHEV, S. F., and FEDYANIN, V. K., Physico-Chemical Institute imeni L. Ya. Karpov

"Electron Theory of Metallic Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 4, Oct 70, pp 713-721

Abstract: The problem of calculating the equilibrium characteristics of the gas of interacting electrons in a metallic film of thickness l is considered. The approach is based on the apparatus of Green functions and correlation functions and allows direct consideration of the effects of inter-electron interaction in the Hartree-Fock approximation, and also of the effects of dynamic shielding. The authors thank Yu. A. TSERKOVNIKOV for discussion of the results.

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UNCLASSIFIED

TITLE--PRINCIPLES OF THE FORMATION OF CRYSTALS AND CRYSTALLINE CONCRETIONS
OF CALCIUM HYDROXIDE IN SETTING CEMENT STONE -U-
AUTHOR--(05)--BUTT, YU.M., TIMASHEV, V.V., BAKSHUTOV, V.S., ILYUKHIN, V.V.,
GOLOVACHEV, V.P.
COUNTRY OF INFO--USSR

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PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. VISUAL, X RAY DIFFRACTION, AND ELECTRONOGRAPHIC STUDY OF CRYSTALS AND CRYST. CONCRETIONS OF PORTLANDITE CO(OH) SUB2 (I), FORMED AND GROWING UNDER DIFFERENT CONDITIONS: SATD. SOLNS. CACL SUB2 AND KOH, HYDRATATION OF TRI,CA SILICATE, AND CEMENTS IN EXCESS OF WATER OR IN USUAL D. OF CEMENT PASTE, IS GIVEN. I CRYSTALLIZES IN THE FORM OF COLORLESS HEXAGONAL TABLETTES OF PRISM AND BELONGS TO THE SPACE GROUP C3ML, A EQUALS B EQUALS 3.60, C EQUALS 5.0 ANGSTROM, INTERAT. DISTANCES CA,O 1.14, O,H 0.79, H,H 1.03 ANGSTROM. THE CONCRETIONS ORIGINATE IN THE PERIOD OF SUPERSATD. COMPN. OF SOLN. OWING TO SIMULTANEOUS GROWTH OF CRYSTALS FROM ONE POINT OR EDGE. THE SIZE OF CRYSTALS FORMING THE CONCRETIONS IS NOT HIGHER THAN THE SIZE OF CRIT. CRYSTG. NUCLEUS (10 PRIME NEGATIVE 6-10 PRIME NEGATIVES CM); BY FURTHER INCREASE OF THE CRYSTAL SIZE, THE PROBABILITY OF FORMATION OF THE CONCRETIONS DECREASES. FACILITY: MKHTI IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 546.681'682'683:543.257.1

KRESHKOV, A. P., SAYUSHKINA, Ye. N., and ~~TRASHKEVA, N. A.~~
Moscow Institute of Chemical Technology imeni D. I. Mendeleev

"Analysis of Binary Mixtures of Gallium, Indium, and Thallium
Salts by Methods of Potentiometric Titration and Ion Exchange
in Non-Aqueous Solutions"

Moscow, Zavodskaya Laboratoriya, Vol 37, No 12, 1971,
pp 1421 -1424

Abstract : The behavior of chlorides, nitrates, and sulfates of
gallium (III) and indium (III), nitrate of thallium (I), and
accompanying elements [Zn (II), Cd (II), Cu (II), Co (II)] in
non-aqueous solutions was investigated. For the quantitative
determination of nitrates and gallium and indium chlorides
and their accompanying elements, a mixed solvent, water-aceto-
ne (1:4), was selected in which the salts show like acids and
are titrated potentiometrically by 0.1 ethanoic solution of

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KRESHKOV, A. P., et al., Zavodskaya Laboratoriya, Vol 37, No 12, 1971,
pp 1421-1424

KOH. Thallium nitrate develops a neutral character in water-acetone media. For its determination, the ion exchange on cationite SVD-3 in H-form is used. For the determination of gallium and indium sulfates and other elements and also mixes of sulfates with nitrates (or chlorides), the cationite SVD-3 in H-form is used with following potentiometric titration of separated acids by 0.1-normal methanol solution of diphenylguanidine. Determinations of salts and their mixtures are described. Two illustrations, two tables, 13 biblio. refs.

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Powder Metallurgy

USSR

UDC 621.752:669.001.5

POYARKOV, V. S., KUNYAN, N. V., and TIMOSHIN, V. V.

"Flammability of Powders of Binary Alloys of Aluminum With Silicon in the Aerosol State"

Kiev, Poroshkovaya Metallurgiya, No 7, Jul 70, pp 96-100

Abstract: Despite the wide acceptance of aluminum-silicon alloys in dispersed state and powdered metal parts in major industries, little if any is known of the flammability of aluminum-silicon alloys. This paper concerns the characteristics of flammability of binary alloys of the aluminum-silicon system. The self-combustion temperature of the specimen, i.e., the temperature which disturbs the thermal equilibrium of the system and starts the spontaneous warm-up of the substance, is taken as the characteristic of flammability. The self-combustion temperature of powder of binary aluminum-silicon alloys varies with their composition and increases from 447 to 640° C with an increase of silicon from 2.3 to 9.0%. The lowest self-combustion temperature of binary aluminum-silicon alloys is 447° C for alloys with 2.3% silicon. At 12% silicon and higher, the alloy's melting temperature sharply rises. Alloys containing 30% Si did not ignite when specimens were heated to 1000° C. The self-combustion (SC) temperature of powders was also studied as a function of dispersity. The

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POYAROV, V. G., et al, Poroshkovaya Metallurgiya, No 7, Jul 70, pp 96-100

SC temperature of this alloy within the dispersity of 0-56 to 315 microns varies within 575 to 742° C. A decrease in particle size lowers the SC temperatures due to the greater specific surface and lower oxidation activation energy. From 30 to 60 tests were carried out for each specimen to determine the lower combustion concentration limit (LCCL) of aerosols. The alloy with 2.3% Si appears to have the lowest LCCL value; its self-combustion temperature is also lower. The flame temperature of aerosols of aluminum-silicon temperatures decreases with an increase in silicon in them.

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USSR

UDC 51

ZHUK, K. D., KORNEYEVA, G. P., TIMCHENKO, A. A.

"Construction of Mathematical Models of Multiconnected Logical-Dynamic Control Systems"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971, pp 188-207 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V382)

No abstract

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Lasers & Masers:

USSR

UDC: 535:

CHEHNETS, A. N., TIMCHENKO, A. I., and SILIN, V. V., Institute of Radio-
physics and Electronics, Academy of Sciences USSR, Khar'kov

"Mandelstam-Brillouin Scattering of Coherent Light in Coherent Hypersound"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 15, No 4, Apr 71, pp 678-680

Abstract: The possibility of the practical use of the phenomenon of Mandel-
stam-Brillouin scattering for processing information applied to a modulated
sound wave excited in an acoustic line of a radar signal, to produce delay
lines for radio signals and lines for compression of radio pulses, etc., is
discussed. It is noted that the intensity of the scattered light is an
essential factor in such applications of this scattering. Ordinarily, gas
lasers are used as the light source; but the intensity of a scattered light
is small, and new materials characterized by a higher Q are being studied
to raise this intensity; for example, lithium niobate. A further rise in
the intensity of scattered light is still important, and one possible way
suggested for solving this problem is to use a ruby laser as a light source.
Since various nonlinear effects are known to arise in powerful light fluxes,
a study was made of the range of powers in which the linearity of the
Mandelstam-Brillouin effect is preserved under irradiation of a lithium
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CHERNETS, A. N., et al, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 4, Apr 71, pp 678-680

niobate single crystal. The experimental setup is described. The ruby laser was modulated with a device consisting of a Pockels-effect cell and a KC-19 shutter. This made it possible to ensure time control of the pulses and a small spectral width of the radiation line, which was $0.01 \text{ \AA}$. The light flux had an intensity of $3 \cdot 10^6 \text{ w}$ and the pulse length was 10^{-7} sec . The lithium niobate crystal had dimensions $18 \times 6 \times 6 \text{ mm}$, and longitudinal hypersonic waves were excited in it by the resonator method at a frequency of 900 MHz . The experiment showed that the linear dependence between the intensities of the scattered and incident light as maintained in the range of light energy densities from 1 to $3 \cdot 10^6 \text{ w/cm}^2$ in the case of lithium niobate. The scattered light intensity achieved was 500 w . The sound intensity in the lithium niobate crystal was calculated to be 10^{-3} w .

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USSR

UDC 615.616.24-003.656.6

TIMCHENKO, A. N., PROTSENKO, G. A., OSTROVSKAYA, I. S.
"Hygienic Characteristic of a New Form of Amorphous Silicon --
Aerosil"

V sb. Materialy XXI-XXII plenumov Resp. komis. po bor'be s sili-
kozom (Materials of the Twenty-first to Twenty-second Plenums of
the Republic Comaission for Controlling Silicosis--Collection of
Works), Kiev, Naukova dumka, 1972, pp 165-170 (from RZh--Farmako-
logiya. Khimioterapevticheskiye Sredstva. Toksikologiya, No 3,
Mar 73, Abstract No 3.54.881)

Translation: Poisoning rats for three months with Aerosil dust
(amorphous SiO_2) M-300 (first group) and Aerosil modified with
dimethyl-dichlorosilane and butyl alcohol (second group; concen-
tration 100-120 mg/m^3) was accompanied by the development of
typical pulmonary silicosis more sharply expressed in the animals
of the first group. USSR, Khar'kov, Institute of Hygiene of
Labor and Professional Disease.

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